

**IOWA DEPARTMENT OF ADMINISTRATIVE SERVICES ▼**  
**HUMAN RESOURCES ENTERPRISE**

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**HIGHWAY TECHNICIAN SENIOR**

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**DEFINITION**

Performs complex material testing, sampling and inspection work, performs district bridge maintenance and repair work; or exercises lead-work responsibility over specialized highway maintenance, materials, inspection and survey services; during construction season, participates/leads a team of employees that performs routine technical (e.g., inspecting/testing construction materials) and survey, field/lab tests and inspection duties; performs related work as required.

***The Work Examples and Competencies listed are for illustrative purposes only and not intended to be the primary basis for position classification decisions.***

**WORK EXAMPLES**

May assist the supervisor by instructing employees, answering questions and distributing, balancing and checking work; may make suggestions on appointments, promotions performance and reassignments.

Performs duties related to snow and ice removal, which include: accessing the Roadway Weather Information System (RWIS), weather reports, and other related computer software applications to record and receive data and make decisions regarding times, temperatures, weather conditions, and material usage to operate snow and ice removal equipment, such as, but not limited to: single or tandem axle dump trucks that may be equipped with tailgate or hopper spreader, straight blades or V-plows, wing plows, and underside ice blades; includes preparing and spreading abrasives and de-icing chemicals on the roadway by using a loader for mixing abrasives and chemicals.

Performs survey work which includes recovering survey markers, converting ancient terms of measurement to modern terms, determining and excavating land/lot corners.

Performs and restores control points, stake proposed permanent easement points, compile and record information for use in final surveys, and prepare acquisition plats and legal descriptions.

Operates Global Position System (GPS) and Electronic Distance Meter (EDM) equipment to take and check measurements resulting in a positional accuracy as prescribed in the Code of Iowa.

Performs technical engineering support and construction trades related work including responsibility for inspection of small to moderately complex construction projects or construction survey projects.

Performs a variety of sampling, testing and/or inspection procedures on various materials to insure production quality and compliance with contract requirements.

Reviews traffic control set-ups for safety and compliance.

Operates various highway maintenance equipment such as, but not limited to, tractors, dozers, loaders, trucks, graders and snowplows for performing highway maintenance duties; oversees material usage crew operations and properly maintains appropriate records.

Documents construction progress and activities in computerized record keeping programs by maintaining detailed project records and preparing periodic reports on project progress and expenditures including item progress, materials used, and test results.

Inspects small to moderately complex construction projects ensuring the work is completed according to specification, which includes sampling and testing materials to be used, ensuring proper certification of materials, coordinating and reviewing the activities of inspectors, maintaining records, preparing authorization for vouchers and project progress reports, and informing supervisor of problems.

Visually inspects the various fabrication processes of metal or concrete structures by observing manufacturing and testing on a daily basis; inspects the production/fabrication processes for other products on a periodic basis.

Visually inspects, measures and sketches various bridge elements and performs district bridge maintenance and repair.

Samples, inspects and monitors the quality control processes and materials of the manufacturer/producer/fabricator to assure conformance with accepted practices and specifications. Observes testing and documentation of quality control personnel.

Works and communicates with internal and external clients and customers such as contractors, suppliers, property owners, motorists, and law enforcement to provide information and address issues.

Assists in training personnel in various operations.

Assists supervisor with evaluating roadway condition and determining work needs.

Assists with surveying of highway construction projects.

Responds as appropriate to roadway emergency situations.

#### **COMPETENCIES REQUIRED**

Knowledge of specialized highway and bridge maintenance, construction and materials equipment, its operation and use.

Knowledge of highway maintenance, construction and materials procedures, techniques, terminology and specifications.

Knowledge of the occupational hazards and safety precautions applicable to the work.

Knowledge of applicable department policies, procedures, and regulations pertaining to highway and equipment maintenance, record keeping, budgeting, and reporting requirements.

Knowledge of the methods and techniques used in the construction and building trades fields, including knowledge of plans, standards, specifications, and special provisions of the employing agency.

Knowledge of basic mathematic principles including algebra, geometry and trigonometry.

Knowledge of effects of weather on road surfaces.

Knowledge of winter maintenance operations, such as anti-icing and deicing principles.

Knowledge of the fundamentals of welding, metallurgy, and materials inspection as it relates to the fabrication of metals.

Ability to operate a Global Positioning System (GPS) and Electronic Distance Meter (EDM) equipment.

Ability to communicate and comprehend directions and instructions.

Ability to occasionally (1-33% of the time) lift/lower, carry and push/pull various amounts of force within the "heavy work" as defined by the US Department of Labor; team lift or mechanical assist recommended for weights over 75 pounds. Related work examples: 60 pound jackhammer, 60 pound high speed or front plow ice blades, 50 pound calcium chloride and pavement patch, 160 pound 9' ice blade, and 70 pound bag of aggregate, etc.

Ability to work out doors in all types of weather conditions, day or night, in normal and emergency situations.

Ability to climb, kneel, crouch, crawl, stoop and twist and perform duties using appropriate tools and equipment within safety standards.

Ability to walk over uneven ground.

Ability to read and write English.

Ability to understand and follow verbal and written directions/instructions given in English.

Ability to accurately perform mathematic calculations.

Ability to operate computers and/or other electronic devices and use programs/applications to conduct Department of Transportation business.

Ability to drive vehicles in a safe and conscientious manner.

Ability to drive equipment with a manual transmission and clutch.

Ability to learn how to properly weld structural steel.

Works and communicates with internal and external clients and customers to meet their needs in a polite, courteous, and cooperative manner. Committed to quality service.

Skill in the use of the Roadway Weather Information System (RWIS), weather reports and other related computer software applications.

Skill in operating computers and related software applications to record and receive data and make decisions regarding highway field work.

Skill in operating hand tools, power tools, and light and heavy highway construction, maintenance and materials testing equipment.

Displays high standards of ethical conduct. Refrains from dishonest behavior.

Works and communicates with all clients and customers providing polite, quality professional service.

Displays a high level of initiative, effort, attention to detail and commitment by completing assignments efficiently with minimal supervision.

Follows policy, cooperates with supervisors and aligns behavior with the goals of the organization.

Fosters and facilitates cooperation, pride, trust, group identity and team spirit throughout the organization.

Exchanges information with individuals or groups effectively by listening and responding appropriately.

#### **EDUCATION, EXPERIENCE, AND SPECIAL REQUIREMENTS**

Graduation from high school, or G.E.D. and four years of full-time highway maintenance and equipment operation work, construction inspection, field work in engineering survey, or materials inspection and testing;

OR

an equivalent combination of education and experience substituting 30 semester hours of accredited post high school education in construction inspection, field work in engineering survey, or materials inspection and testing, for each year of the required experience;

OR

employees with current continuous experience in the State Executive Branch that includes 18 months of full-time work as a Highway Technician or as a Construction Technician.

#### **NECESSARY SPECIAL REQUIREMENTS**

Must possess a valid Commercial Driver's License Instruction Permit upon hire. Within 14 calendar days following appointment, a valid Class A Commercial Driver's License must be obtained and maintained with air brake and tanker endorsements in order to continue employment. Other endorsements may also be required.

In conjunction with Title 49 of the Code of Federal Regulations (parts 40 and 382), this job requires a pre-employment drug screen and will require ongoing participation in the employer's random drug and alcohol testing program and will be subject to the regulations regarding the Federal drug and alcohol testing program.

Prior to starting employment all persons are required to have a post offer, pre-employment physical verifying the physical ability to perform the duties described.

Within a period of time as determined by the appointing authority, designated positions are required to have and maintain a current Herbicide Applicator certification from the Department of Agriculture and Land Stewardship.

Positions require certification for testing materials and operating specialized equipment as required by the Iowa Department of Transportation's Technical Training and Certification Program for Highway Materials and Construction; and/or other certifications as required.

Designated positions must attend a comprehensive bridge inspection course required by the National Bridge Inspection Standards within a period of time designated by the appointing authority at the time of appointment.

**NOTES**

Employees must be able to travel and may be required to stay away from home overnight during assignments.

Within a timeframe as determined by the appointing authority, employees in designated positions are required to reside within 30 minutes driving time, during normal conditions, from assigned work location.

Employees must respond to emergency situations as required.

Employees must be able to work up to 16 consecutive hours.

Effective Date: 10/13 BR